

Customer No.: 31561
Application No.: 10/709,374
Docket No.: 10657-US-PA

REMARKS

Present Status of the Application

Claims 2-5, 8, 9, and 12-14 are withdrawn and claims 1, 6, 7, 10 and 11 are pending. The Office Action rejected all presently-pending claims 1, 6, 7, 10 and 11. Specifically, the Office Action rejected claim 1 under 35 U.S.C. 102(e), as being anticipated by Koyama et al. (U.S. 6,801,283). The Office Action also rejected claim 6 under 35 U.S.C. 103(a) as being unpatentable over Koyama et al. (U.S. 6,801,283) in view of Kanno et al. (US 2003/0016325). The Office Action rejected claim 10 under 35 U.S.C. 103(a), as being unpatentable over Koyama et al. (U.S. 6,801,283) and Kanno et al. (US 2003/0016325) in view of Shimoshikiryou et al. (US 2002/0033923). The Office Action rejected claim 7 under 35 U.S.C. 103(a), as being unpatentable over Koyama et al. (U.S. 6,801,283) and Kanno et al. (US 2003/0016325) in view of Yano et al. (US 2002/0034596). The Office Action rejected claim 10 under 35 U.S.C. 103(a), as being unpatentable over Koyama et al. (U.S. 6,801,283), Kanno et al. (US 2003/0016325) and Shimoshikiryou et al. (US 2002/0033923) in view of Yano et al. (US 2002/0034596). Applicants respectfully traverse the rejections, and reconsideration of all presently-pending claims 1, 6, 7, 10 and 11 is respectfully requested.

Customer No.: 31561
Application No.: 10/709,374
Docket No.: 10657-US-PA

Discussion of Office Action Rejections

The Office Action rejected claim 1 under 35 U.S.C. 102(e), as being anticipated by Koyama et al. (U.S. 6,801,283). Applicants respectfully traverse the rejections for at least the reasons set forth below.

Independent claim 1 recites the features as follows:

1. A wide viewing angle liquid crystal display, comprising:
a back light unit;
an optical compensation circular polarizer unit set over the back light unit;
an optically self-compensated birefringence liquid crystal panel set over the
optical compensation circular polarizer unit; and
an optical compensation circular analyzer set over the liquid crystal panel..

(emphasis added).

In re U.S. 6,801,283, Koyama et al. were silent on "optically self-compensated birefringence liquid crystal panel", and claim is "NOT" anticipated by Koyama et al. (U.S. 6,801,283). Therefore, the rejection of claim 1 should be withdrawn. Additionally, the wide viewing angle liquid crystal display with optically self-compensated birefringence liquid crystal panel in claim 1 has sufficient wide viewing angle and reduced response time.

Customer No.: 31561
Application No.: 10/709,374
Docket No.: 10657-US-PA

The Office Action also rejected claim 6 under 35 U.S.C. 103(a) as being unpatentable over Koyama et al. (U.S. 6,801,283) in view of Kanno et al. (US 2003/0016325); the Office Action rejected claim 10 under 35 U.S.C. 103(a), as being unpatentable over Koyama et al. (U.S. 6,801,283) and Kanno et al. (US 2003/0016325) in view of Shimoshikiryou et al. (US 2002/0033923); the Office Action rejected claim 7 under 35 U.S.C. 103(a), as being unpatentable over Koyama et al. (U.S. 6,801,283) and Kanno et al. (US 2003/0016325) in view of Yano et al. (US 2002/0034596); and the Office Action rejected claim 10 under 35 U.S.C. 103(a), as being unpatentable over Koyama et al. (U.S. 6,801,283), Kanno et al. (US 2003/0016325) and Shimoshikiryou et al. (US 2002/0033923) in view of Yano et al. (US 2002/0034596). Applicants respectfully traverse the rejections for at least the reasons set in Table I below.

Customer No.: 31561
 Application No.: 10/709,374
 Docket No.: 10657-US-PA

Claim	The present invention	Differences
6	<p>the optical compensation circular polarizer unit further comprises: a polarizer plate; a first uniaxial quarter-wave plate sandwiched between the polarizer plate and the liquid crystal panel, wherein <u>the optical axis of the first uniaxial quarter-wave plate and an absorption axis of the polarizer plate form an included angle of about 45°</u>; and a first biaxial compensation film sandwiched between the first uniaxial quarter-wave plate and the liquid crystal panel.</p>	<p>1. Kanno et al. taught that a positive biaxial birefringence compensation plate (405) is sandwiched between an uniaxial quarter-wave plate (409) and the liquid crystal panel (401).</p> <p>2. Koyama et al. disclose (Column 4, lines 40-46) that <u>"Although a wide-band circular polarizer consisting of a half wave retarder and a quarter wave retarder is generally used, it is also possible to simply make a circular polarizer by placing a quarter wave retarder so that its slow axis is making a 45 degree angle with respect to the transmission axis of the polarizer"</u>. As described above, Koyama et al. teach that <u>slow axis of quarter wave retarder and the transmission axis of the polarizer form an included angle of about 45° when single quarter wave retarder is used</u>. In other words, Koyama et al. fail to teach that <u>slow axis of quarter wave retarder and the transmission axis of the polarizer form an included angle of about 45° when both the half wave retarder and the quarter wave retarder is used</u>.</p> <p>3. Suggestions and teachings are lacked for skilled artisan to combine the disclosures discussed by Koyama et al. and Kanno et al. Even combine, the result is not equivalent to Claim 1.</p>
7	<p>the first biaxial compensation film has principal refractive indices n_x, n_y and n_z that satisfy the following inequality relations: $n_x > n_y > n_z$ and $(n_x - n_z)/(n_x - n_y) > 6$, and the principal axis with the refractive index n_x is perpendicular to the alignment direction of the liquid crystal panel.</p>	<p>In re US 2002/0034596 (abstract), Yano et al. disclose that <u>the retardation film exhibits $N_z = (n_x - n_z)/(n_x - n_y)$ in a range of from 0.6 to 0.9</u>. The range of $(n_x - n_z)/(n_x - n_y)$ disclosed by Yano et al. is not the same as Claim 7.</p>

Customer No.: 31561
 Application No.: 10/709,374
 Docket No.: 10657-US-PA

10	<p>the optical compensation circular analyzer unit further comprises: an analyzer plate, wherein the absorption axis of the analyzer plate is perpendicular to the absorption axis of the polarizer plate, and <u>the polarizer plate form an included angle of between 40° to 50° with the alignment direction of the liquid crystal panel;</u> a second uniaxial quarter-wave plate sandwiched between the analyzer plate and the liquid crystal panel, wherein the optical axis of the second uniaxial quarter-wave plate forms an included angle of about 45° with the absorption axis of the analyzer plate; and <u>a second biaxial compensation film sandwiched between the second uniaxial quarter-wave plate and the liquid crystal panel.</u></p>	<p>1. Kanno et al. fail to disclose the feature of <u>"the polarizer plate form an included angle of between 40° to 50° with the alignment direction of the liquid crystal panel"</u> recited in Claim 10.</p> <p>2. Shimoshikiryou et al. teach that by providing <u>biaxial phase difference compensators</u> on both sides of the display. However, Shimoshikiryou et al. fail to suggest or teach the actual position of the <u>biaxial phase difference compensators</u>.</p>
11	<p>the second biaxial compensation film has principal refractive indices n_x', n_y' and n_z' that satisfy the following inequality relations: $n_x' > n_y' > n_z'$ and $4 > (n_x' - n_z') / (n_x' - n_y') > 2$, and the principal axis with the refractive index n_x' is perpendicular to the alignment direction of the liquid crystal panel.</p>	<p>In re US 2002/0063819 (paragraph [0015]), Yano et al. disclose that <u>$N_z = (n_x - n_z) / (n_x - n_y)$ is in a range of from 0.1 to 0.4, preferably in a range of from 0.2 to 0.3.</u> The range of $(n_x - n_z) / (n_x - n_y)$ disclosed by Yano et al. is not the same as Claim 11.</p>

Table 1

Customer No.: 31561
Application No.: 10/709,374
Docket No.: 10657-US-PA

For at least the foregoing reasons, Applicant respectfully submits that all presently pending claims 1, 6, 7, 10 and 11 patently define over the prior art references, and should be allowed.


Customer No.: 31561
Application No.: 10/709,374
Docket No.: 10657-US-PA

CONCLUSION

For at least the foregoing reasons, it is believed that the pending claims 1, 6, 7, 10 and 11 are in proper condition for allowance. If the Examiner believes that a telephone conference would expedite the examination of the above-identified patent application, the Examiner is invited to call the undersigned.

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Respectfully submitted,



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